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(54) **Moisture stable chewing gum**

(57) The absorbance of water, upon storage, of chewing gum containing high levels of hygroscopic softening agent is prevented by formulating the chewing gum with such amounts of water as would be needed to saturate the amount of softening agent present. The chewing gum comprises at least 8% by weight of the softening agent e.g. glycerine or prylene glycol and has an equilibrium relative humidity of more than 25.

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## SPECIFICATION

## Moisture stable chewing gum

5 The present invention relates to chewing gum products which contain relatively large amounts of liquid hygroscopic softening agents and which are stabilized against the absorbance of water during the storage thereof by formulating the product, during the manufacturing process, with such amounts of water as would be needed to saturate the amount of hygroscopic softening agent present.

Recent advances in the art of formulating sugarless or sugar based chewing gums in order to make products which retain a soft texture over extended periods of storage have dictated that such products be made with relatively large amounts of a liquid hygroscopic softening agent such as glycerine or propylene glycol. See in this regard, for example, European Patent Application 82670 and International Patent Application WO 84-10693. The formulations for the products of these patent applications require that they have relatively very low moisture contents, of the order of, respectively, less than 2%, and less than 1%.

Although these products do tend to retain their softness properties over extended periods of time, it is necessary, in order to prevent these products from absorbing water during storage, to package them in moisture impermeable packaging. Unless these prior art products, therefore, are packaged and stored in moisture impermeable packages, they will readily absorb moisture from the atmosphere. At relative humidities of  $\leq 50\%$ , at  $22^{\circ}\text{C}$ , these products will absorb enough water as to, within about 24 hours, first render the product sticky enough to prevent a facile removal of the packaging material therefrom. After about 72 hours the product will then absorb enough water as to turn it into a puddle of water. It will literally deliquesce.

Thus, the commercialization of these prior art products requires that they be made, packaged and stored under anhydrous conditions in order to prevent deleterious amounts of water from being absorbed by these products.

It has been found that the basic reason why these products have such an affinity for absorbing water in deleterious quantities is that they have relatively low equivalent relative humidity values, i.e., of the order of less than 15.

Equilibrium relative humidity (ERH) or relative vapor pressure is the humidity at which a foodstuff neither gains nor loses moisture and the figure is expressed as a percentage. A discussion of ERH relative to food products and a method for the determination thereof is to be found in "Chocolate, Cocoa And Confectionery," Science and Technology, Second Edition, 1980, Bernard W. Minifie, AVI Publishing Co., Inc., Westport, Connecticut, U.S.A., Appendix I, pp. 672-677 (the disclosure of which is incorporated herein).

The test procedure disclosed in such publication is the one used for testing and evaluating the compositions disclosed herein.

Prior to the present invention, therefore, it has not been thought possible by those in the art to provide a soft chewing gum product made with large quantities of liquid hygroscopic softening agent which will not absorb deleterious amounts of water upon storage, and thus not require the use of stringent and expensive anhydrous manufacturing, packaging and storing conditions and means.

The present invention relates to chewing gum comprising at least 8% by weight of at least one liquid hygroscopic softening agent and having an ERH of more than 25.

The present invention also relates to a method for preventing moisture absorbance in the chewing gum product comprising liquid hygroscopic softening agent in an amount which is at least 8% of the weight of said chewing gum during the storage of said product which comprises formulating said product with water in such an amount as would be needed to saturate said amount of liquid hygroscopic softening agent during the manufacture of said product.

It has now been found, according to the present invention, that soft chewing gum products made with relatively large amounts of liquid hygroscopic softening agents, but which do not absorb water to an unacceptable extent during the storage thereof while exposed to the ambient atmosphere can be provided by formulating the chewing gum product during the manufacture thereof with such amounts of water as would be needed to saturate the amount of hygroscopic softening agent in said product.

The term "hygroscopic softening agent" as used in the context of the present invention means a liquid material (at  $25^{\circ}\text{C}$ ) which is a food grade softening or plasticizing agent which is hygroscopic. These liquid hygroscopic softening agents would include glycerine and propylene glycol.

In saturating the hygroscopic softening agent with water during the manufacturing process, according to the present invention, the amount of water being added to the formulation for this purpose may include:

- a) water added as such,
- b) water present in the softening agent,
- c) water added in the form of an aqueous solution of a bulking agent or other component of the formulation, and/or
- d) water added as a component of any other component of the formulation.

The amount of water needed to saturate the hygroscopic softening agent will vary depending on the softening agent being used, but will always be the same for such softening agent regardless of the type

and/or amount of the other components in the chewing gum formulation. The amount of water needed to saturate a specific hygroscopic softening agent can be determined experimentally or gleaned from the literature. See, for example, Handbook of Food Additives, 1968, Thomas E. Furia, The Chemical Rubber Co., Chapter 11, Polyhydric Alcohols, pp. 447-460. In the compositions of the present invention at least about 0.20 to 0.25, and preferably at least about 0.26 to 0.35, and most preferably about 0.36 to 0.50 parts by weight of water are used per part by weight of the softening agent. 5

It is not known for a fact that when the water is added to the chewing gum formulations of the present invention it actually physically saturates all portions of the hygroscopic softening agent in such formulations. What is known, however, as observed by the present inventors, is that when the amount of water added to the formulation is the amount which would saturate the hygroscopic softening agent per se, the applicant's desired results are obtained. The resulting manufactured products do not absorb water in deleterious amounts upon storage. Their ERH values are at least two to three times higher than the ERH values of chewing gum products containing more than 8% liquid hygroscopic softening agents and less than 2% moisture. As evidenced by the tests used to evaluate the ERH values of the products of the present invention, they do absorb small amounts of water of the order of about  $1 \pm 0.5\%$  at 52% relative humidity over a 72 hour test period. These amounts, however, would not have a deleterious effect under common commercial storage conditions. The products of the present invention have ERH values of more than 25, and preferably of about 30 to 35, and most preferably of up to about 35 to 50 or more. Preferred ERH values are  $>25$  to  $\leq 35$ , at least  $>35$  to  $\geq 50$ ,  $30$  to  $\leq 40$  and  $>40$  to  $\geq 50$ . They may be safely packaged and stored in moisture permeable packaging under relative humidity values of up to about 60 to 70% at 15 to 30°C, for at least four months without experiencing commercially adverse water absorption problems. 10 15 20

#### *Chewing gum compositions*

The chewing gum compositions contemplated by the present invention comprise all types of sugar and sugarless chewing gums and chewing gum formulations known to those skilled in the art, including the regular gum and the bubble gum types. Typical chewing gum compositions comprise a chewing gum base, a modifier, a bulking agent or sweetener, and one or more other additives such as flavoring agents, colorants and antioxidants. The modifying agents are used to soften, plasticize and/or compatibilize one or more of the components of the gum base and/or of the formulation as a whole. 25 30

The chewing gum products of the present invention would have the following formulation:

	Component	Weight % of Component						
		Broad Range			Preferred Range			
35	gum base	15	to	35	20	to	30	35
	liquid, hygroscopic softening agent	8	to	30	10	to	15	
40	modifying agent other than liquid, hygroscopic softening agent	0	to	5	0.3	to	3.0	40
	non-nutritive sweetener	0	to	2	0.1	to	0.4	
45	natural sugar	0	to	90	40	to	65	45
	coloring agent	0.1	to	0.5	0.15	to	0.3	
50	flavoring agent (other than sweetener)	0.5	to	2.5	0.18	to	1.2	50
	moisture*	2	to	8	3.5	to	5.0	
55	hydrogenated starch hydrolysate	0	to	30	5	to	20	55
	Total	100			100			

60 \* Moisture content contributed by all components, including any H<sub>2</sub>O added as such. 60

#### *Gum base*

The composition of the gum base will vary depending on whether the gum base is to be used in a chewing gum product which is to be a regular, or non-bubble, gum product or a bubble gum product.

65 For use in making a bubble gum or regular chewing gum product, the following gum base formulations 65

may be used, in accordance with the present invention:

5	Component	Weight % of component in gum base for Bubble Gum Product		Regular Gum Product		5
		Broad Range	Preferred Range	Broad Range	Preferred Range	
10	masticatory material	8-22	9-18	8-25	9-18	10
	plasticizer for masticatory material	5-35	10-20	2-30	8-20	
15	hydrophilic detackifier	0-30	4-10	5-35	10-25	15
20	plasticizer for hydrophilic detackifier	0-14	0-8	1-15	3-12	20
	wax	3-15	5-10	4-20	8-15	
25	mineral filler	1-35	10-22	5-35	15-30	25
	antioxidant	0-0.1	0.05-0.09	0-0.1	0.03-0.09	
	Total	100		100		

30 The masticatory substances are elastomeric materials which may be synthetic or natural in origin. The masticatory substances of synthetic origin would include styrene-butadiene copolymer, butyl rubber (which is isobutylene-isoprene copolymer) and polyisobutylene. The natural masticatory substances would include chicle, crown gum, nispero, balata, jelutong, pendare, perillo, niger gutta, tunu, leche caspi, sorva and gutta hank kang.

35 The plasticizer for the masticatory substance will preferably comprise a hydrogenated ester gum, that is, a glycerol ester of hydrogenated rosin and/or dimerized ester gum. However, other rosins may be employed such as pentaerythritol ester gum, polymerized ester gum, polyterpene resin and ester gum.

40 The hydrophilic-type detackifier is a material which will absorb saliva and would include vinyl polymers having a molecular weight of at least 2,000, and preferably of about 2,000 to 80,000 or more, such as polyvinyl acetate, polyvinyl butyl ether and copolymers of vinyl esters and/or vinyl ethers with ethylene.

45 The plasticizers for the hydrophilic type detackifiers would include one or more of triacetin, acetylated glycerides and other flavor adjuvants such as ethyl acetate and triethyl citrate, and others as listed in U.S. Patent No. 4,452,820 at column 4, lines 27 to 46, the disclosure of which is incorporated herein by reference.

50 The oleaginous material includes waxes which are used primarily as compatibilizers/plasticizers between the elastomeric and rosin phases, where such two phases are employed. Examples of the waxes are petroleum waxes such as paraffin wax and microcrystalline wax; the polyethylene waxes; and natural waxes derived from either plant or animal sources such as candelilla wax, carnauba wax and bees wax. The oleaginous material may also include hydrogenated vegetable or animal fats, cocoa butter or other softening-emulsifying agents such as phosphatides such as lecithin and di- and tri-glycerides of fatty acids.

55 The mineral fillers would include calcium carbonate, titanium dioxide, talc, alumina, tricalcium phosphate and mixtures thereof.

In addition, the gum base may include antioxidants such as butylated hydroxy toluene, butylated hydroxy anisole and propyl gallate.

60 The chewing gum compositions of the present invention can be sugar based or sugarless. The sugar or sugar substitute used in the compositions of this invention include natural sugars or non-nutritive sweeteners. The amount of natural sugar which can be present in the final composition can range from about 0.5 to about 90 weight percent. The amount of non-nutritive sweetener which can be used can range from 0 to about 2 weight percent of the final composition.

65 The term "natural sugar" includes one or more sugar containing materials, for example, monosaccharides of 5 to 6 carbon atoms, such as arabinose, xylose or sorbose, or mixtures of two or more of the foregoing monosaccharides; disaccharides such as sucrose, for example, cane or beet sugar including sucrose and dextrose, lactose, maltose or cellobiose; and polysaccharides such as dextrin or corn syrup

solids.

In addition, the dried higher polyhydric alcohols may be employed together with a non-nutritive or artificial or intense sweetener such as poorly water-soluble, as well as water-soluble, sweeteners such as aspartame or L-aspartyl-L-phenylalanine methyl ester, the free acid form of saccharin, sodium, calcium or ammonium saccharin salts, dihydrochalcones, glycyrrhizin, dipotassium glycyrrhizin, glycyrrhizic acid/ammonium salt, talin, acesulfame K, as well as *Stevia rebaudiana* (Stevioside), *Richardella dulcifica* (Miracle Berry), *Dioscoreophyllum cumminisum* (Serendipity Berry), free cyclamic acid and cyclamate salts, and the like, or mixtures of any two or more of the above. The artificial sweetener may also be employed without any other sweetening agent.

10 In addition to the above, the chewing gum made by this invention can also contain conventional FD&C and natural coloring agents. 10

The flavoring which can be included in the chewing gum compositions made in this invention can comprise one or more synthetic flavors and/or oils derived from plants, leaves, flowers and fruit. Representative flavors and oils of these types include acids such as adipic, succinic and fumaric acid; citrus oils such as lemon oil, orange oil, lime oil and grapefruit oil; fruit essences, such as apple essence, pear essence, peach essence, strawberry essence, apricot essence, raspberry essence, cherry essence, plum essence and pineapple essence; essential oils such as peppermint oil, spearmint oil, mixtures of peppermint oil and spearmint oil, clove oil, bay oil, anise oil, oil of nutmeg, oil of sage, oil of bitter almonds, cassia oil and methylsalicylate (oil of wintergreen). Various synthetic flavors such as those for a mixed fruit, may also be incorporated in the chewing gum with or without conventional preservatives.

20 When aspartame is used as a sweetening agent in the chewing gum formulations of the present invention, it has been found desirable to use aqueous solutions of hydrogenated starch hydrolysate as a stabilizing agent for the aspartame. See, in this regard, the following U.S. patent applications filed on even date herein, Serial No. 677,717, filed in the names of John E. Beam, et al. and entitled Comestible Containing Moisture and Shelf Storage Stabilized L-Aspartic Acid Derivative, and Serial No. 677,716, filed in the names of John E. Beam, et al. and entitled Comestible Containing Moisture, CaCO<sub>3</sub>, and Shelf Storage Stabilized L-Aspartic Acid Derivative. The disclosures of these patent applications are incorporated herein by reference thereto. 25

The aqueous solutions of hydrogenated starch hydrolysate which are used in such compositions may be the main preferred source of water added to such compositions for the purposes of providing the high ERH value chewing gum compositions of the present invention. In other chewing gum compositions of the present invention which do not employ the hydrogenated starch hydrolysate solutions, the water can be added thereto, as such, or as an aqueous solution of another component such as an aqueous solution form of one or more of the sweetening or bulking agents.

30 The hydrogenated starch hydrolysate which may be used in the compositions of the present invention may be a hydrogenated corn syrup or hydrogenated starch hydrolysates of varying dextrose equivalents (DE), such as are disclosed in U.S. Patent Re. No. 26,959 and U.S. Patent Nos. 3,556,811, 4,279,931 and 4,382,962, as well as various hydrogenated glucose syrups and/or reconstituted powders which contain sorbitol, hydrogenated disaccharides, tri- to hexa-hydrogenated saccharides, and hydrogenated higher polysaccharides, or mixtures of any two or more of the above. 35

40 The hydrogenated glucose syrups or hydrogenated starch hydrolysates and/or powders thereof may be produced by catalytic hydrogenation of standard glucose syrups (acid and/or enzyme converted) to the point where all the glucose end groups of the saccharides are reduced to alcohols, that is, dextrose to sorbitol. In the case of hydrogenated glucose syrups, the total solids contents will usually range from about 65 to about 80%, which solids are made of from about 4 to about 70%, and preferably from about 4 to about 20%, sorbitol, from about 8 to about 65%, and preferably from about 20 to about 65%, hydrogenated disaccharides (that is, mannitol), and 20 to 80% of the higher ( $\geq$ tri to hepta) hydrogenated saccharides. The preferred of the hydrogenated starch hydrolysates contain from about 8 to about 45%, and preferably about 15 to 45%, tri- to hepta-hydrogenated saccharides, and from about 10 to about 35%, and preferably about 15 to 25%, hydrogenated saccharides higher than hepta. 45

50 The hydrogenated starch hydrolysate is also referred to in the literature as hydrogenated glucose syrup, or by the trademark or tradename Lycasin polyol or Lonza polyol. The term hydrogenated starch hydrolysate will be used herein to designate such material. The hydrogenated starch hydrolysate is usually sold commercially in the form of an aqueous solution thereof having a moisture content of about 20 to about 35%. 55

The preferred L-aspartic acid derivative to be used in the compositions of the present invention is, as noted above, L-aspartyl-L-phenylalanine methyl ester, known as aspartame. Other L-aspartic acid sweetening derivatives may also be used. Such derivatives are disclosed in U.S. Patent No. 3,955,000 at column 3, line 63 to column 4, line 35, the disclosure of which is incorporated herein by reference. The following description will be directed to aspartame with the understanding that the other L-aspartic acid sweetening derivatives may be used in lieu of and/or in addition to the aspartame. These compounds are also known as dipeptides. 60

### *General preparation of chewing gum product*

The chewing gum products of the present invention are prepared by first separately preparing the gum base. To then prepare either a sugar based or sugarless chewing gum formulation, the gum base for the product is melted, at a temperature about 190 to 250°F, and the other components of the composition are added thereto. The resulting composition is uniformly admixed. This takes about 3 to 7 minutes for commercial sized batches of these formulations. Each of the components is usually separately added to the formulated composition and uniformly mixed in before the next component is added. All of the admixing operations are conducted at temperatures in the range of about 115 to 185°F, and preferably of about 125 to 180°F, for a total mixing time, at such temperatures, of about 10 to 20 minutes. These operations do not have to be conducted under anhydrous conditions in preparing the compositions of the present invention, and any amounts of moisture that are normally present in the raw materials that are used in the compositions of the present invention do not usually have to be removed therefrom either prior to, or during, the formulating process. The one exception to this concept of not removing water occurs when using rubber latices as the source of the masticatory substance. As in prior art practice, the moisture content of the latex is, essentially, normally removed after coagulating the latex.

The chewing gum formulations disclosed herein may thus be prepared, and processed into chewing gum products, using conventional chewing gum formulation mixing, processing and packaging equipment and concepts.

The following examples are merely illustrative of the present invention and are not intended as a limitation upon the scope thereof.

### *Preparation of chewing gum compositions*

Various chewing gum compositions were prepared using various of the gum bases prepared as described above. In preparing the chewing gum compositions, they were prepared either in pilot plant sized batches, or in commercial production sized batches in paddle mixers. In preparing each batch, the previously prepared gum base is melted at a temperature of up to about 245° ± 5°F and is premixed with lecithin and color additive, and, optionally, the hydrogenated starch hydrolysate, until the temperature drops to about 185 to 189°F. Then there is sequentially added powdered sorbitol (at a temperature of ≤ 180°F), liquid flavor (i.e., peppermint), liquid sorbitol, if used, glycerin, if used, alone or with the hydrogenated starch hydrolysate, if the latter is not premixed with the gum base, any additional flavorants, and finally the aspartame, and, optionally, any other intense sweeteners. Each component is paddle mixed in before the next is added. Each mixing step takes about 0.5 to 5.0 minutes and the total mixing time is about 10-13 minutes. The resulting product is recovered and further processed and packaged using conventional chewing gum making procedures.

The hydrogenated starch hydrolysate used in the chewing gum compositions evaluated in the example had a solids content of 75 ± 1%, a monosaccharide content of about 6 to 8%, a disaccharide content of about 50 to 55%, and a higher saccharide content of about 38 to 48%. The higher saccharides were about 20 to 25% in the 3-7 DP (degree of polymerization) range, and about 18 to 23% in the > 7 DP range.

Unless otherwise indicated, the total H<sub>2</sub>O content reported below for each of the chewing gum formulations of the Examples is a calculated amount based on the water content of the hydrogenated starch hydrolysate (HSH), about 25%, and glycerine, about 1.0%, (where used) plus any added water used in the respective formulations. The actual water content of these formulations is about 0.2 to 0.5% higher than the reported calculated values, since such additional amounts of water enter the final formulated product from the other components of the formulation and from the ambient atmosphere. The total of the reported weight percents for the respective formulations of these Examples will thus total about 100% plus the respectively reported calculated water contents.

The test formulations were prepared using batch pilot plant procedures. Prior to beginning the pilot plant batch making process, two separate glycerine/HSH batches are prepared, each of which contains one-half of each of the formulated amounts of the glycerine and the hydrogenated starch hydrolysate that are to be used in making the product of each example. One of such premixtures is then used in each of steps 4 and 7 noted below.

### *Step-wise pilot plant procedure*

1. Into a pre-warmed sigma bladed mixer add molten gum base. The gum base temperature should be between 150-200°F, and preferably between 170-190°F.

2. With the blades of the mixer operating, and the temperature in the cited range, the lecithin is added and the mixing is continued for one minute.

3. Add 1/3 of the bulk sweetener (sorbitol powder) and mix for two minutes, or until homogenous.

4. Add one of the glycerine/HSH premixtures or the first 1/2 of the HSH and mix for two minutes, or until homogenous.

5. Add 1/3 of the sorbitol powder and continue mixing for two minutes. Add (any) added water.

6. The liquid flavor is then added and mixing is continued for one minute.

7. Add the second glycerine/HSH premixture, or the second 1/2 of the HSH and mix for two minutes.

8. Add the remaining 1/3 of the sorbitol powder and the non-sugar sweetener. Prior to production of the batch, the non-sugar sweetener is premixed with approximately 1/3 of the sorbitol powder. Continue

mixing for two minutes, or until the batch is homogenous. The final gum temperature is approximately 112°F.

9. The gum is removed from the mixer and condition at 70°F/ambient R.H prior to forming.

10. The gum is rolled and scored into a stick configuration. Mannitol is applied to the surface of the scored gum to prevent surface adhesion. The gum is then packaged.

#### Examples 1-3

Three chewing gum products were made in the pilot plant procedure as described above to which 2.75, 4.75 and 6.75%, respectively water, as such was added, using the following formulations, and they had the ERH values reported therefor, below:

	Component	Weight % of a Component in Product			
		1	2	3	
15	styrene-butadiene elastomer based gum base	28.00			15
	sorbitol powder	47.88			
	lecithin	1.00			
	flavor	1.00			
20	saccharin	0.12			20
	mannitol	2.00			
	glycerine	15.00			
	hydrogenated starch hydrolysate	5.00			
25		100.00	100.00	100.00	25
	added water	2.75	4.75	6.75	
	ERH value	36	38	53	
30	Calculated water content*	3.90	5.90	7.90	30

When the products of Examples 1 to 3 are packaged and stored in moisture permeable packaging under relative humidity values of about 60 to 70% at 15 to 30°C they do not experience commercially adverse water absorption problems.

35 Similar products, however, when made with about 8% or more of glycerine and having a water content of no more than about 2% will undergo severe water absorption problems under the same conditions and in the same type packaging and, as such, are not commercially acceptable products from a long term storage point of view.

#### 40 CLAIMS

1. Chewing gum comprising at least 8% by weight of at least one liquid hygroscopic softening agent and having an ERH of more than 25.
2. Chewing gum of Claim 1 wherein water is present in such an amount as would be needed to saturate the liquid hygroscopic softening agent.
3. Chewing gum as in Claim 1 or 2 having an ERH of at least 35 to  $\geq 50$ .
4. Chewing gum as in Claims 1-3 in which said hygroscopic softening agent is glycerine or propylene glycol.
5. Chewing gum as in Claims 1-4 in which said hygroscopic softening agent comprises glycerine.
6. Chewing gum as in Claims 1-5 comprising at least 10% glycerine.
7. Chewing gum as in Claims 1-6 having an ERH of at least  $\geq 30$  to  $\leq 40$ .
8. Chewing gum as in Claims 1-7 having an ERH of at least  $> 40$  to  $\geq 50$ .
9. Chewing gum as in Claims 5-8 which comprises at least 0.33 parts by weight of water per part by weight of said glycerine.
10. Chewing gum as in Claims 1-9 in which said water is provided, at least in part, in form of an aqueous solution of at least one component of said chewing gum other than said softening agent.
11. Chewing gum as in Claim 10 in which said water is provided, at least in part, in the form of an aqueous solution of at least one bulking or sweetening agent, selected from starch hydrolysate, sugar alcohol or natural sugar.
12. Chewing gum as in Claim 11 in which said bulking agent comprises a sugar alcohol, preferably sorbitol.
13. The chewing gum of any of Claims 1 to 12 which comprises, in weight percent about 8 to 12% glycerine about 0.05 to 0.4% non-nutritive sweetener about 11 to 16% hydrolysed starch

hydrolysate in the form of an aqueous solution.

14. Chewing gum as in any of Claims 1-13 packaged as a product in water permeable packaging means and which is to absorb no more than about  $1 \pm 0.5\%$  water during the storage of the packaged product at 52% relative humidity at 15 to 30°C for at least 72 hours.

5 15. A method for preventing moisture absorbance in the chewing gum product of any of Claims 1-14 comprising liquid hygroscopic softening agent in an amount which is at least 8% of the weight of said chewing gum during the storage of said product which comprises formulating said product with water in such an amount as would be needed to saturate said amount of liquid hygroscopic softening agent during the manufacture of said product. 5

10 16. In a process for manufacturing, packaging and storing packaged chewing gum of any of Claims 1 to 14 products containing at least one liquid hygroscopic softening agent in an amount which is at least 8% of the weight of said chewing gum product so as to prevent said product from absorbing deleterious quantities of water during the storage of the packaged product, the improvement which comprises formulating said product, during the manufacture thereof, with water in such an amount as would be 10

15 needed to saturate said amount of liquid hygroscopic softening agent. 15

17. A process as in Claims 15-16 in which said water is provided in the form of added water, as such, and/or in the form of an aqueous solution of at least one component of such product other than said softening agent.

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